

<b>Examiner-Initiated Interview Summary</b>	Application No.	Applicant(s)	
	10/782,034	CHAPMAN, LEONARD T.	
	Examiner	Art Unit	
	Carramah J. Quiett	2622	

**All Participants:**

- (1) Carramah J. Quiett, Patent Examiner.  
 (2) Kenneth Ohriner, Applicant's Attorney.

**Status of Application:** RESPONSE TO NON-FINAL OFFICE ACTION

- (3) \_\_\_\_\_  
 (4) \_\_\_\_\_

**Date of Interview:** 19 December 2006

**Time:** 1:15pm

**Type of Interview:**

- ☒ Telephonic  
☐ Video Conference  
☐ Personal (Copy given to: ☐ Applicant ☐ Applicant's representative)

Exhibit Shown or Demonstrated: ☐ Yes ☐ No  
 If Yes, provide a brief description:

**Part I.**

Rejection(s) discussed:  
 NONE

Claims discussed:  
 1-6, 9-11, 12-14, 18-19, 24-25, 26-31

Prior art documents discussed:  
 NONE

**Part II.**

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:  
 See Continuation Sheet

**Part III.**

- ☒ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.  
☐ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

  
 (Examiner/SPE Signature)

\_\_\_\_\_  
 (Applicant/Applicant's Representative Signature – if appropriate)

Continuation of Substance of Interview including description of the general nature of what was discussed: Examiner called the attorney in order to propose an Examiner's Amendments to the claims discussed above. On December 20, 2006, the attorney submitted agreed to the proposed amendments. For more details please see the seven page document entitled, "Further Response and Amendment", which was signed by Attorney Ohriner and faxed to the Examiner. Also, please see the Examiner's Amendment..

Attorney Docket No. 54767.8065.US00

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: LEONARD T. CHAPMAN  
APPLICATION NO.: 10/782,034  
FILED: FEBRUARY 19, 2004  
FOR: **THREE-AXIS REMOTE CAMERA HEAD**

EXAMINER: CARRAMAH J. QUIETT  
ART UNIT: 2622  
CONF. NO: 4269

**FURTHER RESPONSE AND AMENDMENT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

After entry of the Amendment filed 12/1/2006, and in further response to the non-final Office Action mailed 09/01/2006, please further amend the application as follows:

A listing of claims begins on page 2 of this paper.

Remarks begin on page 7 of this paper.

**[Continued on Next Page.]**

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**Certificate of Electronic Filing**

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being electronically filed with the U.S. Patent and Trademark Office on the date entered below.

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Date of Electronic Submission

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Debbie Gilbert

54767-8065.US00/LEGAL12551031.1

Listing of Claims:

1-11. (Cancelled)

12. (Previously Presented) A camera head comprising:

a first frame;

a first arm rotatably attached to the first frame;

a first motor for rotating the first arm relative to the first frame, with the first motor enclosed within a sealed first housing;

a second frame attached to the first arm;

a second arm rotatably attached to the second frame;

a second motor for rotating the second arm relative to the second frame, with the second motor enclosed within a sealed second housing;

a first shaft rotatably supported within the first housing, with the second frame attached to the first shaft, and the first shaft sealed against the first housing, a first gear linked to the first shaft through a first clutch, and with the first gear linked to the first motor, and one or more clutch drive pins sealed against the first housing, and moveable from a first position, wherein the first motor drives the first shaft through the first clutch, to a second position, wherein the first shaft can rotate free of the motor.

13. (Original) The camera head of claim 12 further comprising a third frame, a third arm rotatably attached to the third frame, and a third motor for rotating the third arm relative to the third frame, with the third motor enclosed within a sealed third housing.

14. (Original) The camera head of claim 12 wherein the first and second sealed housings are waterproof, to allow for underwater operation of the camera head.

15-17. (Cancelled)

18. (Previously Presented) The camera head of claim 23 further comprising a tube adapter having a tube nipple and a base plate, with the tube adapter attached to the first slip ring assembly and to the first housing, first seal sealing the base plate to the first slip ring assembly, and a second seal sealing the slip ring assembly to the first housing, to provide a waterproof connection for wires leading into the first slip ring assembly.

19. (Original) The camera head of claim 12 further comprising a position locking device moveable from a locked position, wherein the locking device prevents movement between the first arm and the second housing, to an unlocked position, wherein the second housing can move relative to the first arm, to adjust the size of the camera head.

20-22. (Cancelled)

23. (Previously Presented) A remote camera head comprising:

a first frame;

a first sealed housing on the first frame;

a first arm rotatably attached to the first frame;

a first motor for rotating the first arm relative to the first frame, with the first motor enclosed within the first sealed housing;

a second frame attached to the first arm;

a second sealed housing on the second frame;

a second arm rotatably attached to the second frame;

a second motor for rotating the second arm relative to the second frame, with the second motor enclosed within the second sealed housing;

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a first hollow shaft rotatably supported within the first sealed housing, with the second frame attached to the first shaft, and the first shaft sealed against the first sealed housing;

a first gear linked to the first shaft through a first clutch, and with the first gear linked to the first motor;

a first slip ring assembly extending into the first hollow shaft;

a first shaft plug within and sealed against the first hollow shaft;

a first electrical cable extending into a first end of the first slip ring assembly via a waterproof connection; and

a second electrical cable extending through a waterproof connection in the first shaft plug and into a second end of the first slip ring assembly.

24-25. (Cancelled)

26. (Currently Amended) A camera support comprising:

a first housing having a first interior sealed space;

a first purge gas port on the first housing connecting into the first interior sealed space, for delivering a purge gas into the first interior sealed space;

a first motor supported by the first housing;

a second housing having a second interior sealed space, and with the second housing linked to the first motor for rotational movement of the second housing relative to the first housing about a first axis,

a second motor supported by the second housing;

a second purge gas port on the second housing connecting into the second interior sealed space, for delivering a purge gas into the second interior sealed space;

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a third housing linked to the second motor for rotational movement of the third housing relative to the second housing about a second axis substantially perpendicular to the first axis; and

a lock pin moveable between a lock position, where the lock pin extends between the first housing and the second housing, to prevent movement between the first housing and the second housing, and an unlock position, wherein the lock pin is withdrawn from one of the first and second housings, to allow rotational movement between the first housing and the second housing.

27. (Previously Presented) The camera support of claim 26 with the second housing linked to the first motor by a first arm, and with the second housing securable onto the first arm at multiple positions on the first arm, and with third housing linked to the second motor by a second arm, and with third housing securable onto the second arm at multiple positions on the second arm.

28. (Cancelled).

29. (Previously Presented) The camera support of claim 26 further comprising an adjustable brake to set braking force against rotation of the second housing about the first axis.

30. (Cancelled).

## 31. (New) A camera support comprising:

- a first housing having a first interior sealed space;
- a first purge gas port on the first housing connecting into the first interior sealed space, for delivering a purge gas into the first interior sealed space;
- a first motor supported by the first housing;
- a second housing having a second interior sealed space, and with the second housing linked to the first motor for rotational movement of the second housing relative to the first housing about a first axis,
- a second motor supported by the second housing;
- a second purge gas port on the second housing connecting into the second interior sealed space, for delivering a purge gas into the second interior sealed space;
- a third housing linked to the second motor for rotational movement of the third housing relative to the second housing about a second axis substantially perpendicular to the first axis
- a first shaft rotatably supported within the first housing, with the second housing attached to the first shaft, and the first shaft sealed against the first housing, a first gear linked to the first shaft through a first clutch, and with the first gear linked to the first motor, and one or more clutch drive pins sealed against the first housing, and moveable from a first position, wherein with first motor drives the first shaft through the first clutch, to a second position, wherein the first shaft can rotate free of the motor.



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**REMARKS AND EXAMINER INTERVIEW SUMMARY**

By this Amendment, claims 1-6, 9-11, 24, 25, 28 and 30 have been cancelled. Claim 26 has been amended to include the content of claim 28. New claim 31 has been added including the content of claims 26 and 30. Claims 12-14, 18, 19 and 23 are allowed. Claims 12-14, 18, 19, 23, 26, 27, 29 and 31 are pending.

In a telephone interview initiated by the Examiner on December 19, 2006, the Examiner indicated that claims 28 and 30 would be allowable if rewritten into independent form. As this Amendment amends claim 26 to include the content of claim 28, and as new claim 31 includes the content of claim 30, and as the other rejected claims have been cancelled, the Application is now in condition for allowance.

In view of the foregoing, a Notice of Allowance is requested.

Dated: Dec. 20, 2006

Respectfully submitted,

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